NUCLEAR DIVISION NEWS

UNION CARBIDE

A Newspaper for Employees of the Nuclear Division, Union Carbide Corporation

Vol. 1 — No. 19 | OAK RIDGE, TENNESSEE | Thursday, October 22, 1970

BIG INVESTMENT—These cylinders of "enriched product" at the Enrichment Services Program represent some $26 million in enriching services alone, and more millions were invested in the uranium "feed material" and cylinders by private industry.

Business Booming at ORGDP Site for Toll Enriching Services

Business is booming for the U.S. Atomic Energy Commission's Enrichment Services Program at the Oak Ridge Gaseous Diffusion Plant.

The program—only 20 months old—has already passed the $100-million milestone for "enriching-service" fees charged to nuclear customers throughout the free world.

And within the next six months, the accelerating rate of orders for enriched uranium will push the total well over $200 million.

Stems from '64 Change

The new operation stems from a 1964 revision of the Atomic Energy Act, which authorizes private ownership of uranium and, under specified conditions, enrichment at government plants at Oak Ridge, Tenn., Paducah, Ky., and Portsmouth, Ohio. Previously only the government could own uranium, and nuclear fuel was leased to commercial power plants.

Now all parts of the nuclear fuel cycle, except the enrichment process, are in the hands of private industry, and even that service is readily available to qualified applicants. Nuclear customers supply their own uranium "feed material" and pay for the process through which it is enriched to the desired percentage of U-235, the fissionable uranium isotope, for use in nuclear reactors.

3 Million Pounds Shipped

The process has been compared with that of a grist mill, where the farmer supplies a bushel of corn and pays for the services required to grind it into meal.

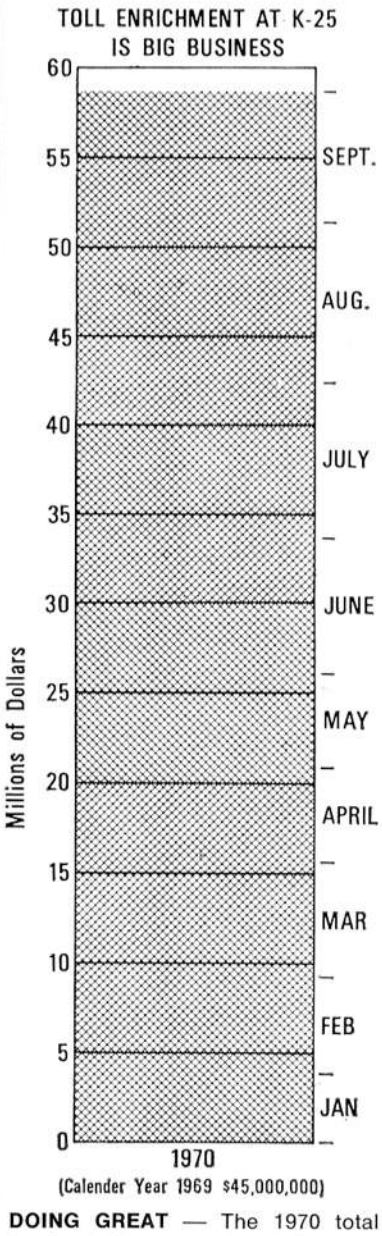
Since the program began in January 1969, ORGDP has shipped more than 3 million pounds of enriched uranium to fuel fabricators for nuclear power plants. ORGDP packages and ships the major portion of the uranium enriched through this program, working closely with both the Paducah and Portsmouth plants in the enriching cycle.

Big Business

Toll enrichment is already big business, and the $100-million milestone reflects only part of the industry's total growth. Private industry has invested millions of dollars—for example, the privately-owned uranium processed at ORGDP during the past 20 months was valued at more than $120 million, even before the enriching process.

Nuclear customers also supply their own shipping cylinders, each of which costs an average of $1,000. When filled with enriched uranium, the typical cylinder is worth a quarter of a million dollars.

During September, more than 200,000 pounds of enriched uranium was shipped to nuclear customers, at a cost of over $8 million. October totals will be even higher. So the future, needless to say, looks extremely bright for the Enrichment Services Program.



DOING GREAT — The 1970 total for "enriching service tolls" is approaching $60 million. Adding that to 1969's $45 million, the program has now passed the $100-million milestone.

Do 'Stay-at-Homes' Elect Our Officials At Election Time?

Will the "stay-at-homes" forfeit the election Tuesday week, November 3?

According to a Gallup Survey, "3 million people said they were away from home on Election Day in 1968." This would account for 18 votes per voting precinct in this country. In 1968 there were 18 U. S. House of Representative seats which were decided by a vote of less than 18 votes per precinct. In 1968 President Nixon's plurality was three votes per precinct. And in 1960 President Kennedy's plurality was smaller than that . . . **less than one vote per precinct!**

If you know you are going to be away from home November 3, there's still time to go by your Election Commissioner's office and vote. Voters who know they will be on business trips or away from home for any reason may vote at the Election Commission office through next Thursday, October 29. Invalids, shut-ins, etc. may apply for absentee ballots through October 24. Service-men and women have until October 26 to apply for absentee ballots.

The list of recent close elections is almost endless. This year's election puts up 35 U. S. Senate seats, 35 gubernatorial seats, and all 435 seats for the House of Representatives. The country will also elect more than 7,600 State Legislators who will have the job

(Continued on Page 5)

Time Change

East Tennesseans, as will most of the rest of the nation, will roll back their clocks one hour Sunday, 2 a.m., October 25.

Nuclear Division men working the second shift Saturday will come to work on Eastern Daylight Savings Time and clock out on Eastern Standard Time. The hour will be "relost" come next Spring.

Project in 5th Year

181 New Trainees Enroll in TAT

The fifth year of the Training and Technology (TAT) Project at the Oak Ridge Y-12 Plant began this month with the enrollment of 181 new trainees, two-thirds of them from Tennessee, in the six-month industrial skill and technical training program.

TAT is conducted jointly by Union Carbide's Nuclear Division and by Oak Ridge Associated Universities, contractor for AEC education and research programs.

Begun in 1966 as an experimental effort to utilize the advanced facilities and highly skilled personnel available here as a new resource for industrial training, TAT has to date prepared more than 1,225 previously unemployed or underemployed persons to the entry level for jobs in six industrial occupations — machining, drafting, electronics, welding, physical testing, and mechanical operations.

Carbide Employs 425

Approximately 425 of these graduates, one-third of the total, are now employed by Union Carbide in Oak Ridge.

Trainees from the immediate Knoxville-Oak Ridge area, Chattanooga, Appalachian counties in Kentucky, Virginia, and West Virginia, and from Illinois and Idaho are included in the group that will participate in the first six-month cycle of the 1970-71 training year.

This geographic distribution reflects the diversity in sources of support for TAT as well as the training services the program provides to AEC installations outside Oak Ridge.

Agencies Share Cost

Agencies sharing in the $1 million cost of the new year's program are the AEC and the Department of Labor which will jointly sponsor 91 trainees in each of two six-month cycles; the Appalachian Regional Commission, 40 positions in each training cycle; and the Chattanooga Concentrated Employment Program (CEP), 50 positions in each cycle. The AEC-Department of Labor jointly sponsored trainees will include 75 trainees primarily from the Oak Ridge commuting area and 16 trainees selected by the Commission's Argonne National Laboratory, 10 from the Chicago area and six from Idaho, where the National Reactor Testing Station is located.

Under the guidelines for federal support of TAT, 75 percent of those enrolled must meet the Department of Labor definition of "disadvantaged." Approximately 40 percent are black or members of other minority groups.

Salaries Increase

The most recent graduates, who entered the program with incomes averaging less than $1,000 annually, have been placed after six months of training in jobs paying an average of $3.25 per hour, or

(Continued on Page 6)

Bloodmobile Visits Oak Ridge Nov. 4-5

The American Red Cross Bloodmobile will visit Oak Ridge again November 4 and 5 to seek 567 pints of blood to maintain Anderson County's "blanket coverage" under the program.

Both visits are scheduled at the Oak Ridge National Guard Armory off the Oak Ridge Turnpike, from 4 to 10 p.m. on November 4 and from 11 a.m. to 5 p.m. on November 5. The special period on November 4 was arranged primarily for the convenience of plant personnel.

Only about 1,400 have joined the donor pool, so the "crash drive" will continue until another 1,600 are enrolled. The total of 3,000 would be enough to supply the annual quota, with one time each year for each blood donor.

If you are between the ages of 21 and 65, please call either Oak Ridge 483-0211, 483-5641 or Clinton 457-2828 so that volunteer groups can schedule you on one of the two days.

3 Plants Doing Well in '70 UF

United Fund leaders throughout the Nuclear Division's three Oak Ridge plants report that the 1970 drive is going very well, perhaps better than ever, and that a "summary report" will be available for the next issue of the **Nuclear Division News.**

Drive general chairman W. H. Hildebrand says that for all intents and purposes the drive is virtually completed and that computer processing of donor cards is already underway. A few loose ends remain, he adds, but most will be cleared up shortly.

Information received from UF assistant general chairman Marion H. Randolph is very interesting in terms of anticipated employee giving to individual counties. Anticipated employee giving to Anderson County will be about $176,000 of an overall $283,000 goal, or 62%; to Knox County, $70,400 of $1,395,000 (5%); to Loudon County, $10,000 of $41,661 (24%); to Morgan, $4600 of $6100 (75%); to Roane, $32,500 of $56,544 (57%); and to others $3500. This represents an overall employee-giving goal of $297,000.

Computerized Nuclear Safety Information Center Answers Questions Quickly

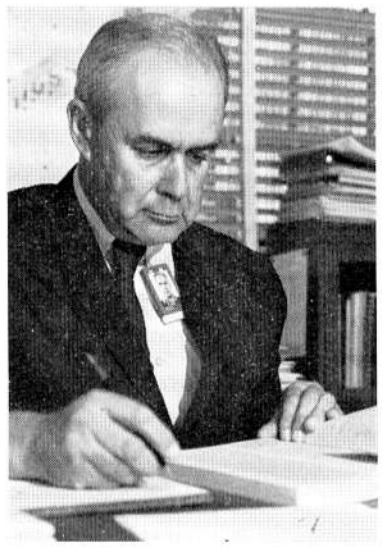
By JOHN M. HAFFEY

If you think Joe Namath has quick moves, you should see how fast the people react at the Nuclear Safety Information Center.

It's a daily routine for some scientist or engineer to contact NSIC and ask:

- "What kind of research is the AEC doing on thermal effects on ecological systems?"
- Or, "What are the latest reactor licensing requirements?"
- Or, even, "Tell me all you know about nuclear safety."

And, fantastically, NSIC — by using a unique combination of computers and highly skilled technical and clerical personnel — can usually provide a good answer very fast, sometimes within minutes. That's a prime reason NSIC exists.



SPECIALIST—Dr. William K. Ergen, an ORNL expert in reactor dynamics, is one of more than 30 Nuclear Division scientists and engineers who assist NSIC by reviewing technical information. The technical experts take time off from their regular research and development activities to help the program.

National Center

Located within the Y-12 Plant area, NSIC is an Oak Ridge National Laboratory group that serves as a national center for collecting, storing, evaluating, and disseminating up-to-date nuclear safety information generated throughout the world.

It's an important and challenging job. The amount of new information generated by the spectacular growth of the nuclear industry is staggering. Without specialized groups like NSIC, researchers would be hopelessly buried in a bewildering deluge of topical and progress reports, journal articles and other sources of information.

To separate the "wheat" from the "chaff," NSIC calls on the Nuclear Division's excellent human resources — scientists and engineers who are expert in needed disciplines; skilled administrative and clerical personnel; and the computer services of the Computing Technology Center (CTC).

CTC Plays Major Role

CTC does all of NSIC's computer-system planning, programming, and operations. The computer center, a Nuclear Division staff consultation - and - support group, serves many of the Division's diverse research, development, and production activities.

In fact, the NSIC system is just one of the significant technical information processing activities served by CTC, with others including work for the AEC Division of Technical Information Extension and several other ORNL information centers.

NSIC's system works like this—First, information specialists screen information sources and channel material to Nuclear Division technical experts. The experts review, assign keywords (from a "vocabulary" of 2,500), and generate abstracts. Then, other staffers transmit the information to a central CTC computer from any one of a number of remote consoles.

Many Requests Answered

CTC's teleprocessing communications network presently consists of 16 remote terminals serving about 10 projects. NSIC routinely involves nine terminals, but access may be made from the other seven as the need arises.

Upon request, the NSIC staff can initiate immediate recall of any of more than 41,000 "entries" maintained by the central computer. And there are plenty of requests! More than 700 technical questions were received by NSIC last year, along with more than 1,500 additional requests for NSIC reports and other nontechnical inquiries.

Since each document added to the computer is described by keywords, all information for which a keyword or combination of keywords was used may be retrieved. Special searches of the NSIC files are usually made on the basis of keywords, author names, or corporate authors, with category and dates used as delimiters.

Scope Still Growing

What began in 1963 as a limited "pilot plant" has grown in scope to encompass information about all types of nuclear facilities and reactors from water-cooled to liquid-metal fast breeders, along with associated considerations such as siting and environmental effects.

The recent emphasis on environmental information has accelerated the growth of the program. During 1969, NSIC developed three new information categories —all of them dealing with vital environmental themes.

NSIC's computerized services are available without charge to government agencies, research and educational institutions, and the nuclear industry. By contacting NSIC, a scientist working in reactor design, for example, may request routine abstracts in his specialty through a program called Selective Dissemination of Information (SDI). SDI references are mailed regularly to some 1,800 members of the nuclear community.

Probably the single most important product of the Center is the state-of-the-art reports issued in the ORNL-NSIC series. These reports (each of which requires at least several months to prepare) are used for the analysis and evaluation of information from the storage files and can result in the synthesis of new concepts.

Need Help?—Call NSIC

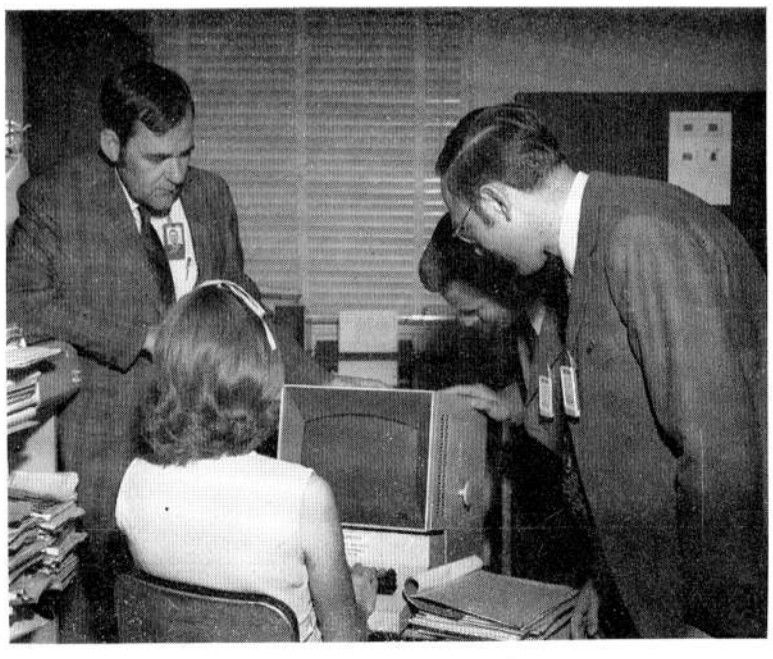
Briefer reviews appear in the Center's bimonthly journal **Nuclear Safety** sponsored by the AEC Division of Technical Information.

William B. Cottrell is director of ORNL's nuclear-safety R&D program, and Joel R. Buchanan is in charge of the day-to-day operations at NSIC. C. L. Allen directs the Computing Technology Center, with E. M. Kidd in charge of CTC's efforts for the information program.

So if nuclear-safety information is important in your work, and if you're "reading more but using less," call on the Nuclear Safety Information Center. Just contact Joel Buchanan (3-7253).

Chances are NSIC's staff can save you time, effort and frustration. They know what they're doing, and they can do it fast.

HELP!—Here NSIC staffer Carol Julian tries to give coworker Henry Piper one more stack of journals for screening. The huge stack was piled up as a gag to illustrate the tremendous volume of technical information processed by NSIC.



QUICK RECALL—NSIC staffers can quickly recall information from CTC's central computer from a number of remote consoles, a system which has been in effect since 1967. From left, Joel Buchanan and Carol Julian demonstrate the system to visitors at the information center.

CTC COORDINATORS—CTC is in charge of all of NSIC's computer programming and processing. Two CTC personnel who have played major roles are, from left, B. H. Stoutt and Leon Yount. With the assistance of Stoutt and others, Yount was in charge of redesigning an existing automated system to work with the "remote consoles" which were added at NSIC in 1967.

Environmental Efforts by AEC Outlined in New Publications

Environmental research and development sponsored by the Atomic Energy Commission is the subject of a new publication just released by the AEC.

This report incorporates for the first time all current environmental research supported by the AEC and as such it represents a convenient reference source for organizations and individuals interested in knowing the nature of the AEC-supported research, its objective and the principal investigator. Indices include subject matter, principal investigator and contractor.

The new report was published by the AEC's Division of Technical Information Extension in Oak Ridge.

AEC's research and development is conducted to assure that nuclear activities are carried out with due regard to human health and safety and to the protection of the environment. To achieve this end the Commission has made available more than one billion dollars since 1947 for research related to man and his environment. Costs for Fiscal Year 1971 for more than 1,000 projects listed in the book are presently estimated at $71,217,000.

The current individual projects of the environmental research and development program are presented under four categories: transport and fate; measuring and monitoring; evaluation of effects (both human health and safety and natural populations and species); and prevention and control technology.

Environmental research and development have been funded by seven AEC divisions — Biology and Medicine, which compiled the volume; Isotopes Development; Military Application; Operational Safety; Peaceful Nuclear Explosives; Production; and Reactor Development and Technology.

Copies of this book entitled "Summaries of USAEC Environmental Research and Development" are available for $3 from the National Technical Information Service, U. S. Department of Commerce, Springfield, Va. 22151.

No More Beetles!

According to the Atomic Energy Commission, the Southern Pine Beetle fight has been won, at least temporarily.

An aerial survey of the government-owned property in the Oak Ridge area and by the U. S. Forest Service indicates that the once serious infestation has apparently been curbed.

The report states: "Results of the survey indicate that insect and disease are at a low level. There were no large groups of suspect dead and dying trees observed. Although several small groups of dying trees were located, it is believed that their presence constitutes little potential future damage at this time..."

The next reconnaissance survey is set for April, 1971.

Infestation of the Southern Pine Beetle was first detected on AEC acreage in 1965. Since that time efforts to prevent the spread of the insect, primarily cutting and salvage operations, have been carried out under interagency agreements between the AEC and the Forest Service.

UNION CARBIDE

—Y-12 BULLETIN

Thursday, October 22, 1970

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NOW YOU SEE IT—Then you don't! The 'Bearded Weirdo,' Larry Austin finds Elizabeth Johnson a most enthusiastic participant in a recent safety program, as Margaret Eager awaits to set the stage for another Safety Seance.

'Bearded Weirdo' Wows Audiences In Technical Division Safety Show

Physical Testing's Larry Austin, who bills himself "The Bearded Weirdo," has been the hit of safety programs throughout the Technical Division lately.

Employees were asked, "Is Safety an Illusion with You?" The answers were provided by Austin through the art of magic.

Entitled "Safety Seance, 1970," the message got across that safety cannot be bestowed through mystical magic powers, but must originate with each individual employee. Through a positive effort, safety can be achieved and certainly need not be an illusion with anyone.

The meetings were enthusiastically received throughout all the showings.

Austin has been performing 'tricks' for a long time, for his own enjoyment, and certainly for everyone else's too.

Roses 'n Thorns Keep Scant Mixed Alley Lead

The Roses 'n Thorns are mere one-point leaders in the Mixed Bowling League after six weeks of play. They are followed by the Goofers. Recently they won four from the Cougars, but fell last week to the Twisters for three points.

Fred Hammond, Goofers, starred as a single in both weeks of rolling, posting scores of 214 and 215.

League standings follow:

Team	W	L
Roses 'n Thorns	18	6
Goofers	17	7
Rollers	14	10
Twisters	13	11
Hits & Misses	11½	12½
Friskies	11	13
Alley Cats	8	16
Cougars	3½	20½

Y-12 Milestones

As the year moves on, so do many Y-12ers, marking important dates with Union Carbide Corporation. Congratulations.

25 YEARS

Lester W. LaRue, Guard Department, October 15.

George H. Kesterson, Chemical Services, October 20.

Lonnie Ellison, Utilities Administration, October 21.

Charles C. Ruckart, Special Services, October 22.

Howard W. Savage, Facilities Engineering, October 22.

Georgia L. Allen, Production Analysis, October 25.

Luther L. Bridges, Timekeeping, October 29.

James D. Bomar, Beta Four Forming, October 30.

Jesse H. Russell, Guard Department, October 31.

20 YEARS

Maxie L. Woodard, Fire Department, October 3.

Joseph E. Smyrl, General Industrial Relations, October 5.

Joel S. Morgan, Area Five Maintenance, October 9.

James B. Johnson, Buildings, Grounds and Maintenance Shops, October 9.

Howard G. Tillery, Mechanical Design Engineering, October 9.

Ezra Ballard, Utilities Administration, October 9.

Henry R. Swallows, Chemical Services, October 10.

Edward W. Pipes, Electronics and Electrical Department, October 10.

Carl Arrowood, Process Maintenance, October 11.

Sam B. Peake, Process Maintenance, October 11.

Goffred F. Moretto, Buildings, Grounds and Maintenance Shops, October 11.

Raymond C. Whitehead, Buildings, Grounds and Maintenance Shops, October 12.

Charles L. Huddleston, Buildings, Grounds and Maintenance Shops, October 13.

Bernard J. Beck, General Metal Fabrication Shop, October 16.

Charles R. Sullivan, Jr., Medical Department, October 16.

Howard L. Horne, Process Maintenance, October 16.

Rupert O. Osborn, Salvage Department, October 16.

William M. Stephan, Buildings, Grounds and Maintenance Shops, October 16.

Calvin W. Scarbrough, Process Maintenance, October 16.

William S. Dritt, Fabrication Systems Development, October 16.

Leonard Bowers, Jr., Research Services, October 18.

J. R. Harris, Buildings, Grounds and Maintenance Shops, October 18.

Basil R. Kitts, Research Services, October 19.

Sam P. Eubanks, Buildings, Grounds and Maintenance Shops, October 19.

Andrew C. Wright, Alpha Five Processing, October 23.

Francis K. Booth, Process Maintenance, October 23.

Emerson S. Henck, General Shop Job Liaison, October 23.

Burnard E. Cooper, Instrument Engineering, October 23.

Edward H. Steelman, Stores Department, October 24.

Hollis R. Southern, Chemical Services, October 25.

Curtis B. Wilson, A-2 Shops, 9212, October 26.

Clarence E. Jarnigin, Material Transfer and Packing, October 27.

Oran C. Buck, Utilities Administration, October 29.

Travis E. Rogers, Electronics and Electrical Department, October 29.

Frederick J. Russell, Research Services, October 30.

Orton J. Howard, Chemical Services, October 31.

Samuel F. Thomas, Area Five Maintenance, October 31.

Samuel F. Sparks, Area Five Maintenance, October 31.

15 YEARS

William H. Holbert, Product Engineering, October 5.

George S. Dykeman, Jr., Engineering Mechanics, October 10.

Charles H. Pride, Utilities Administration, October 14.

Basil E. Lett, H-2 and F-Area Shops, October 17.

Hoyt O. Seivers, Electronics and Electrical Department, October 26.

Virginia M. Giles, Production Assay, October 31.

Ray A. Mackey, Buildings, Grounds and Maintenance Shops, October 31.

10 YEARS

Mary E. Goss, Buildings, Grounds and Maintenance Shops, September 21.

Cecil M. Stogsdill, Product Engineering, October 3.

Marvin L. Sheffler, Fabrication Division Engineering, October 3.

Jimmy F. Gilliam, Buildings, Grounds and Maintenance Shops, October 5.

John R. Baker, Critical Path and Regular Production Scheduling, October 10.

James E. Thompson, Beta Four Forming, October 10.

Oscar A. Cooper, Jr., Process Maintenance, October 10.

James E. Batch, Product Engineering, October 17.

SHARING PATENT APPLICATION—William L. Harper, left, and Margaret Morrow received a $1 patent application letter recently for a joint development, "Ultra-Fine Carbide Powder and Method for Preparing Same." James M. Schreyer, right, presents the two their honorarium.

Y-12 Papers Given In Technical Meets

Estes **Turner**

The Oak Ridge Y-12 Plant's control of environmental pollution and the description of an exotic welding technique were discussed in national meetings this month.

I. G. Speas, head of Y-12's Engineering Mechanics Department, presented a paper "Environmental Pollution Control at the Oak Ridge Y-12 Plant" at the Southeastern Industrial Health Conference in Gatlinburg, October 1.

Speas

Developmental welding engineers C. L. Estes and P. W. Turner have authored a paper entitled "Ultrasonic Welding Closure of Small Aluminum Tubes." It was presented at the American Welding Society meeting in Baltimore, Md., October 8-9.

The Speas paper described the solution of environmental control problems in Y-12, one of the largest manufacturing installations in the State of Tennessee.

Some of the steps taken to control pollution include the installation of chemical waste ponds for disposal of dilute acid solutions; the construction of a mixing and settling pond for thermal and pH control of process water prior to release to natural streams; the use of electrostatic precipitators in the steam plant smoke stacks to reduce fly ash; and the replacement of open trash incineration with a sanitary landfill. Additional safeguards are provided by continuous monitoring of the plant's effluent streams.

The Estes-Turner paper described the use of ultrasonic welding—joining metals by use of high frequency vibratory energy — to seal small aluminum tubes vacuum tight. The ultrasonic welding method proved superior to other techniques in meeting the special requirements of the job.

Raiders Assume Lead On Starlite's Alleys

The Raiders slipped into top berth in Starlite bowling last week with a sweeping win over the Mix-Ups.

Jack Holt, Mix-Ups, rolled a 224 week before last. Frank Kitts, Latecomers, came early and rolled a 605 series; a 213 single game.

League standings follow:

Team	W	L
Raiders	15	3
Latecomers	14	4
Mix-Ups	13	5
Marauders	12	6
Woodpeckers	10	8
Wild Cats	10	8
Pin Boys	8	10
Comets	7	11
Rollers	1	17
Pin Splitters	1	17

6-14840

SETS A RECORD—Candy Striper Marion Oliver receives congratulations from Sister Mary George, Administrator at St. Mary's Hospital. Marion recently broke a record, serving 3,000 hours as a volunteer Candy Striper. The old record at St. Mary's was 2,200 hours.

Y-12ers' Daughter Breaks Record For Candy Stripers at St. Mary's

Marion Oliver has a flying start, so to speak, on her nursing career. Marion, the daughter of Mr. and Mrs. Edwin E. Oliver, just recently entered nursing training at St. Mary's Hospital.

Marion has wanted to be a nurse a long time. And the Candy Stripers in Knoxville offered her the opportunity to slip up on a career even while she was a teener.

Marion this summer logged her 3,000th hour as a Striper, breaking the old St. Mary's record of 2,200 hours! And a lot of that time was spent in care of the ill and injured at the hospital.

Marion was the first baby in the Air Lock at the Oak Ridge Hospital back in 1952, shortly after the new mechanism was installed. Her parents now live at 5710 Wallwood Drive, Knoxville.

The Powell High School graduate gathered some invaluable experience at St. Mary's while on Candy Stripe duty. She observed the birth of a baby in the obstetrics ward, since a physician there knew of her interest in nursing, particularly OB work. Marion also witnessed a post mortem, but quickly decided that the former was more to her liking.

Marion's father works in Research Services here in Y-12. There is an older son, Thomas, also at home.

Ride wanted from Gallaher exit section of I-40, to Pine Ridge Portal, straight day. W. A. Farmer, plant phone 3-5821, home phone Kingston 376-9916.

Riders wanted from South Knoxville, Alcoa Highway section, to any Portal, East preferably, straight day. Walter McGill, plant phone 3-7415, home phone Knoxville 573-6208.

Riders wanted from Concord-Farragut area, via Lovell Road, to any portal, straight day. J. C. Taylor, plant phone 3-7510, home phone Concord 966-5163.

Car pool members wanted from Maryville, to any portal, straight day. Don Sexton, plant phone 3-5297, home phone Maryville 982-2906.

Investors Club Sets Meeting October 31

The East Tennessee Council of the National Association of Investment Clubs will present a workshop October 31, at the Quality Motel, Atkins Street, Knoxville. The meeting will begin at 9:30 a.m. The five major NAIC tools used in making investment studies will be explained and demonstrated. The workshop is open to all members of area investment clubs and to other interested investors.

Lunch will be at 12, with Lafitte Howard, financial editor of the Knoxville News-Sentinel, as guest speaker.

Cost, including lunch, is $6. Reservations may be made through R. P. Milford, Knoxville telephone 588-8089, or Ann Nowlin, Oak Ridge telephone 483-4232.

Swingsters and Rippers Locked at Top of Classic

The Swingsters have moved into the charmed circle, tieing with the Rippers for the lead in the Classic Bowling League. They downed the Bumpers last week for four, as the Rippers trimmed the Screwballs for three.

Ted Higgins, Playboys, put a 242 game away recently; while Ray Winnie, Eightballs, took a 235.

League standings follow:

Team	W	L
Rippers	20	8
Swingsters	20	8
Playboys	18	10
Has Beens	18	10
All Stars	17½	10½
Bumpers	16	12
Cubs	15	13
Eightballs	15	13
Splinters	14	14
Markers	14	14
Screwballs	12½	15½
Eagles	12	16
Rebels	12	16
Rojos	12	16
Tigers	6	22
Smelters	5	23

Fishing Rodeo Ends With Lunker Award

Recreation has announced winners in the Spring-Summer Fishing Rodeo, but weights and sizes will have to remain secret. Many of the entries have been entered in the annual show, as well, which is entirely permissible.

There were eight first place prizes. These men will receive a seven-foot spinning rod. Seven lucky fishermen will take a fish skinner as second-place winners; and five bait canteens will go to third place winners.

Winners by species were:

LARGEMOUTH BASS

1. William C. Anderson, Area Five Maintenance.
2. Ralph E. Gibson, General Machine Shop.
3. Buford M. Nolan, Research Services.

SMALLMOUTH BASS

1. John S. Orr, Area Five Maintenance.
2. Lanoy Lane, Electrical and Electronics.
3. Cecil Hubbard, Research Services.

STRIPED BASS

1. Fred B. Guttery, Chemical Services.
2. Oran C. Buck, Utilities Administration.

SAUGER PIKE

1. Milton Carlton, Research Services.
2. C. R. Anderson, Beta Four Heavy Machine Shop.

WALLEYED PIKE

1. Oran C. Buck, Utilities Administration.

CRAPPIE

1. Roscoe A. Hamrick, Production Radiation Testing.
2. Sidney R. Anderson, H-1 Foundry.
3. Wendell Less, Engineering Mechanics.

BREAM-BLUEGILL

1. William Q. Adams, Fabrication Systems Development.
2. Henry N. Benninghoff, retired.
3. Reginald T. Lovell, Tool Grinding.

TROUT

1. Joe Jackson, SS Warehousing and Shipping.
2. Greer E. Valentine, Material Specimen Shop.
3. Lewis C. DeBord, Production Radiation Testing.

The awards were not in, according to Recreation, but are expected soon. Winners will be notified when they can pick up the bounty.

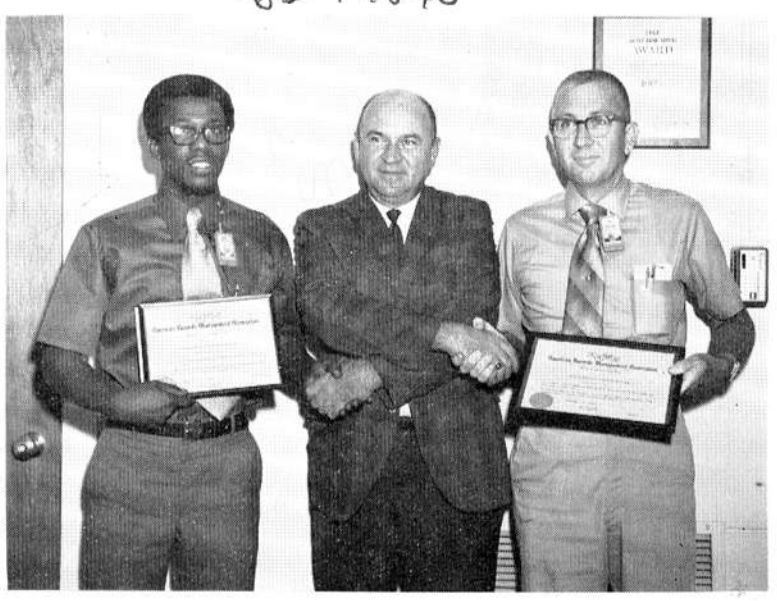
Leo Thometz's Rites Were Held October 12

Leo A. Thometz, a general foreman in the General Machine Shop, died at his Kingston home October 9. A native of Eaton Lake Township, Minn., Mr. Thometz came to the Oak Ridge Gaseous Diffusion Plant August 26, 1944. He transferred to Y-12 in 1961.

L. A. Thometz

The Thometz home is at 400 Lakewood Road, Kingston. Surviving are his wife, Mrs. Danice S. Thometz; two daughters, Alma Dowell, Kingston; and Mrs. Doris Taylor, Newport News, Va.; a son, Leo Thometz, Freemont, Calif.; one sister, Mrs. Mary Koenig; and brothers, Albert, Richard and Edward Thometz, all of St. Cloud, Minn.; and 13 grandchildren.

Funeral services were held October 12, at Kingston Church of Christ. Burial followed in the Kingston Memorial Gardens.



JOIN RECORDS ASSOCIATION—Wilbert D. Minter, left, and Kenneth B. McNabb, right, are the first Nuclear Division men to join the American Records Management Association. They receive their shingles from Edward A. Pluhar, center, Superintendent of Materials and Services.

Y-12 Papers

Scott

West

Bowers

Stewart

The Oak Ridge Y-12 Plant was represented at two national meetings, as technical papers were given by scientists from the plant.

Health physicists L. M. Scott and C. M. West presented their study to the Bioassay and Analytical Chemistry Conference of the Health Physics Society in Bethesda, Md., October 8-9. The title of their paper was "Personnel Monitoring Problems Associated with the International Commission on Radiation Protection's Proposed Lung Model."

The Fourteenth Annual Analytical Chemistry Conference in Nuclear Technology, meeting in Gatlinburg, October 13-15, featured papers by G. L. Bowers and J. H. Stewart, Jr. The Bowers paper was entitled "Automated Quantometer Data Handling System." Stewart's paper was "The Quantitative Analysis of Micrometer-Size Uranium Alloy Powders Using the Electron Microprobe X-Ray Analyzer."

The information contained in these presentations was obtained through development studies in support of U. S. Atomic Energy Commission programs here.

Rollmasters' Bill Ladd Sets C Alleys Afire

The Rollmasters rolled themselves to the top of the C Bowling League . . . four wins over the Big Five, three over the Jaguars, after some fancy footwork by Ace Bill Ladd. Ladd rolled a 686 series October 5, only 14 pins shy of the magic 700 mark.

On October 12, Ladd put a 258 single game on the racks. Dick Huber bested that one, however, the previous week, rolling a 269!

Team	W	L
Rollmasters	15	5
Rounders	13	7
Jaguars	12	8
Fireballs	10	10
Royal Flush	10	10
Big Five	10	10
Parbusters	9	11
Instrument Engineers	9	11
Anodes	9	11
Badgers	8	12
Purple Pygmies	8	12
Sunflowers	7	13

Join Organization

Two Y-12ers have become active members in the American Records Management Association. The non-profit, educational organization was formed to promote and advance the improvement of records and information management and related fields through study, education and research.

Within Y-12 the records management program is to provide uniform procedures and retention periods, to describe its operations and to outline methods for accomplishing its objectives.

Kenneth B. McNabb, who came here November 12, 1953; and Wilbert D. Minter, who hired in October 9, 1967, are the first Y-12ers to become affiliated with the ARMA.

Superintendent of Materials and Services Edward A. Pluhar presented the two recordsmen their shingles recently.

Development's Foster Rites Held in Knoxville

E. M. Foster, Materials Engineering Development, died October 3 in a Knoxville hospital.

E. M. Foster

A native of Maine, Mr. Foster served in the United States Marine Corps in the Pacific during World War II. He re-entered service as a major and served during the Korean conflict.

Mr. Foster had a B.S. degree in chemical engineering from the University of Maine.

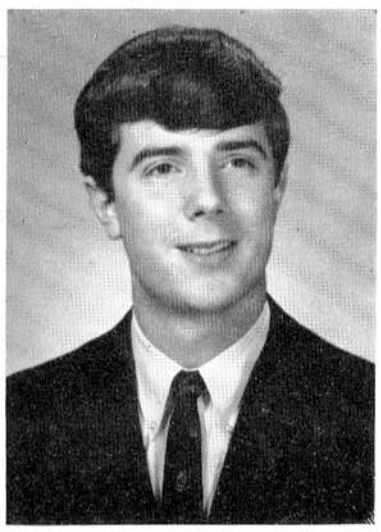
The Foster home is at 828 Tipton Street, Knoxville. Survivors include his wife, Mrs. Mary Foster; two sons, Paul H., in the U. S. Navy, and Ernest M. Foster, Jr., a student at Maryville College; and a sister, Mrs. Cleo Drown, Kingfield, Me.

Funeral services were held October 6 at Berry Funeral Home, Knoxville, with the Rev. John McKinnson officiating. Interment followed in Highland Memorial Cemetery.

THE CARBIDE COURIER

Thursday, October 22, 1970

Lab Notes



David T. Zava

David T. Zava, a 1966 graduate of Oak Ridge High School, has been awarded a fellowship for graduate work at The University of Tennessee School of Medicine in Memphis. He will continue his studies with the Department of Biochemistry in the field of medical research.

Zava completed his freshman year at the University of Richmond in Virginia and the remain-

(Continued on Page 4)

Ruel Milam and Fred Richardson Mark Retirement from K-25 as Old-Timers

Ruel Milam and Fred Richardson will retire from ORGDP the end of this month. Both men have over 25 years of company service.

Milam has worked as a guard in the plant Security Department since joining Union Carbide in December, 1944. He is a native of Decatur County, Tenn. After attending Union University at Jackson, he taught school for eight years. During World War II, he served with the 783rd Combat Military Police Battalion.

Milam

After completing his military service, Milam returned home and married the former Sue Bates and came to Oak Ridge where they were both employed by Union Carbide.

The Milams have six children, two boys and four girls. Jim, a graduate of Oak Ridge High School and Tennessee Technological University, is teaching at the State Vocational Institute, Pikeville. Linda Wyatt, a former ORGDP employee, is with her husband at Castle Air Force Base, Calif., where he is a lieutenant in the Air Force. Joyce Ann is a sophomore at Tennessee Technological University; Bill, the youngest son, is a junior at Oak Ridge High School; and twins, Lena and Lola, attend Linden Elementary School.

Milam enjoys sports and gardening. He has no definite plans after retirement other than pursuing his hobbies. He lives at 108 Bradley Ave., Oak Ridge.

F. L. Richardson

Richardson has been a custodial foreman in the Janitors Department, Fabrication and Maintenance Division. He has been employed here since March, 1945. Prior to joining Carbide he worked for Stone and Webster in Oak Ridge and before that worked for the Fraser Brace Engineering Corporation at the Holston Ordinance Works, Kingsport.

Richardson

Mrs. Richardson is the former Vivian Dingus, Dungannon, Va., and worked in the Payroll Department in 1944 and 1945. The Richardsons have two sons, Larry Fred, employed at the Computing Technology Center, and Edward Bruce, who works for Western Electric, St. Louis, Mo.

Richardson's outside interests have been hunting and fishing but he says that he now plans to just take it easy. The Richardsons live at 120 South Hickory Lane, Oak Ridge.

UNITED FUND MEETING—Jo Acres, secretary to J. W. Arendt, divisional coordinator for the Laboratory Division, invited Z. H. (Steve) Brody, Director of the Daniel Arthur Rehabilitation Center, to talk to the two United Fund meetings that Laboratory Division employees attended. Brody brought bright-eyed Tonja Forrester, 8, of Kingston, a student at the Center, with him. With Tonja in the top photograph, left to right, are Mrs. Acres, Brody, W. E. Rooks, Marion Randolph and Arendt. In the lower photo, Brody introduces Tonja to the interested crowd.

Women's Bowling

Mary Foley bowled a 600 scratch series and took all the Bowler-of-the-Week honors in the October 7 session of the K-25 Women's League. She had scratch scores of 187, 242, 171 — 600, and handicap scores of 210, 265, 194 — 669.

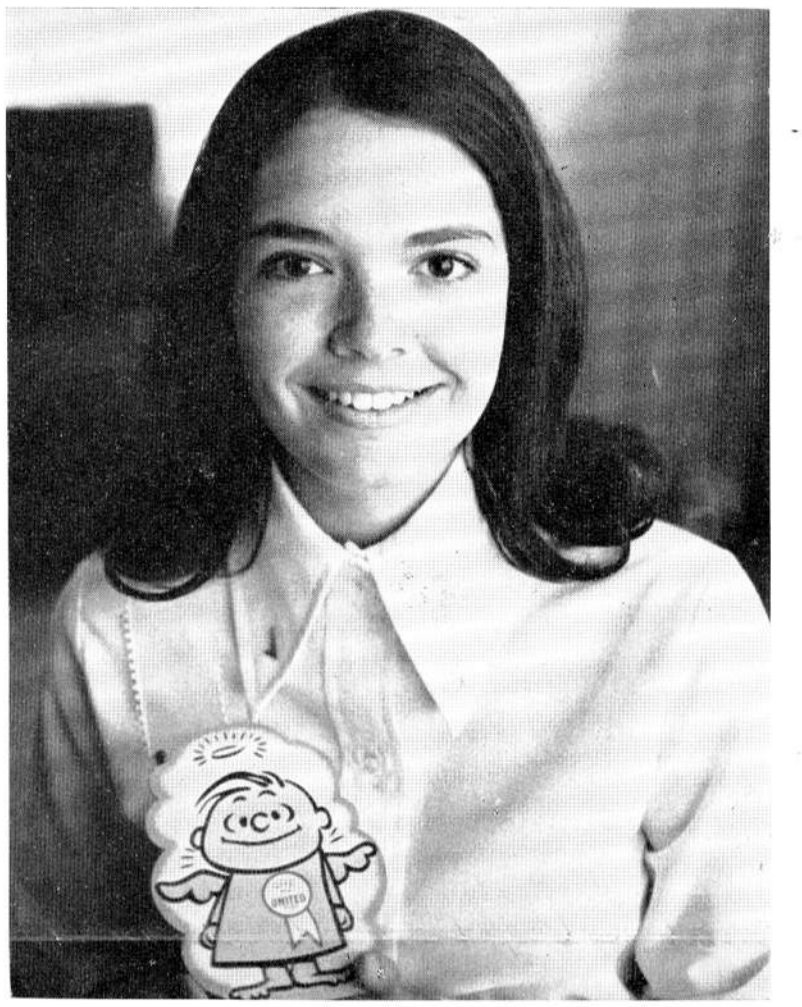
Bobbie Hill and **Marilyn Canterbury** were the top bowlers in the September 29 session. Bobbi had the best series scores with 515-632. Marilyn had single game scores with 201-257.

Standings

Up-Towners	13	Spotters	7
Wood Bees	11	Bowlettes	7
Hot Shots	9	Pin-Ups	6½
Pay-Offs	9	Hits & Misses	1½

SAFETY SCOREBOARD

OUR PLANT
Has Operated
632,000 Safe Hours
Through October 15
Since last disabling injury on August 31



A GOOD GUY—Libby Snyder holds the 'Good Guy' symbol of the United Fund drive. Note the lapel check pin Libby is wearing. She was recently selected Miss United Fund for Anderson County.

Libby Snyder, 'Miss United Fund,' Calls Drive 'Protest with Meaning'

(Libby Snyder, daughter of R. R. Snyder, barrier plant, Operations Division, was chosen as this year's "Miss United Fund of Anderson County." Libby is a senior at Oak Ridge High School. As one of her many contributions to the United Fund Appeal, she was asked to put down her thoughts about the drive.)

By Libby Snyder

"What is the United Fund all about?" a friend recently seemed embarrassed to ask me.

Frankly, I had asked that same question only a few weeks ago. As a candidate for "'Miss United Fund" I wanted to know a lot more about the United Fund of Anderson County.

To me the United Fund had been a gold pin on my father's lapel, an outstretched hand, or a slogan saying, "If you don't do it, it won't get done." I had not stopped to consider, deeply, why my father was given the pin at work, or whose hand was outstretched, or what needed to be done so desperately.

I took a good look at the faces of the United Fund and I learned a lot.

Volunteers Help

Well-known and little-known faces of the community are among the leaders and volunteers of the United Fund. Ministers, business and professional men and women, housewives, — all types of people are vitally involved in the United Fund Drive.

Volunteers supply a very great part of the manpower for the 18 community service agencies and the Red Cross. I had worked in the Red Cross Swim Program and knew that it was run almost totally on volunteer effort.

The Arthritis Clinic, once a week, has the services of a volunteer physician.

Girl Scouts and Boy Scouts and those in the other youth organizations are inspired and led by volunteers.

Hundreds of people are giving their time and effort to the United Fund agencies.

'Unforgettable' Faces

The most unforgettable faces are those of the children helped by the United Fund.

I visited the children at Daniel Arthur Rehabilitation Center, my first visit to the school for children with every kind of handicap. In one room wide-eyed smiling girls and boys were singing "Simon Says," complete with clicking fingers and waving hands. It is sad to know they have problems, but I left there with an optimistic feeling of love and understanding for the children.

How would these children get the special care they need if the

(Continued on Page 4)

THE CARBIDE COURIER

Published Biweekly
Editor ..... H. J. Mayberry
K-1002 Building, Tel. 3-3097

These Employees Reach 25 Years Service This Month

K-25's 'Biggest and Best Yet' Barbecue, Hootenanny Featured Something New

Almost 1,000 K-25ers, members of their families, and guests enjoyed the Barbecue - Hootenanny at the Clark Center Recreation Park. The now famous barbecued meat was prepared to its usual perfection, the weather was perfect, and a good time was had by all.

ORGDP Superintendent R. G. Jordan said: "The afternoon and evening activities were certainly enjoyed by many Carbide families. I am sure we all appreciate the efforts of those who prepared and served the food or otherwise assisted in making the K-25 Barbecue-Hootenanny a very enjoyable event."

Something new was added to this year's outing in the form of several softball games between divisions in the plant. Operations Division beat Finance and Materials' employees in the first game. Employees from the three Technical Divisions downed the team from Fabrication and Maintenance then beat the Operations team, the winners of the first game, for the championship. The final game was a special challenge match between Engineering and Operations with Operations coming out on top. Outside of a few bruises and stiff muscles, there were no casualties.

20 Years' Service

C. L. SUTTON

Lab Notes

(Continued from Page 3)

ing three years at Carson Newman College in Jefferson City. In May he received a bachelor's degree in biology.

While at Carson Newman, Zava received a work scholarship in the Department of Biology, and served as laboratory assistant in the zoology, biology, and cellular physiology laboratories. He was named to the Dean's List and selected for membership in the Beta Beta Beta Biological Society.

Zava is the son of Mr. and Mrs. Thomas E. Zava, 132 Normandy Rd., Oak Ridge. He is married to the former Karen Stair, Clinton, and they have one son, David C. Zava.

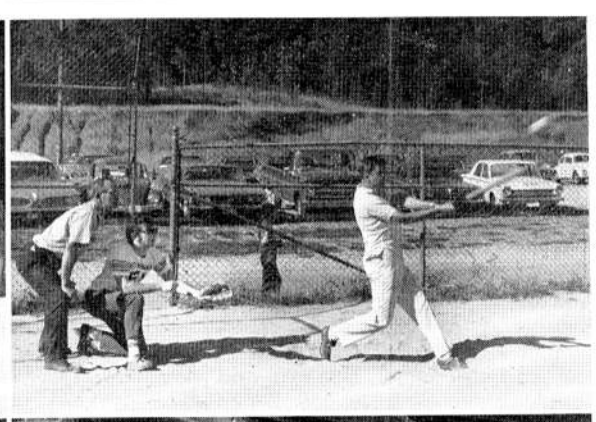
★ ★ ★

Jerry Morgan, laboratory glassblower in the Isotopic Analysis Department, and Mrs. Morgan are the parents of their first child, Sandra Louise. She is now at home in Coalfield.

★ ★ ★

15 Years' Service

M. M. KING



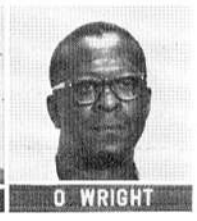
BARBECUE-HOOTENANNY—Random shots from K-25's big Barbecue-Hootenanny show, in the top left photo, the evening shifters preparing to turn and baste the pork shoulders. In the right photograph, Ken Sommerfeld displays world series form as he bangs out a long one for the Operations team. In the lower photos, folks are seen waiting on the delicious food, and going through the 'long, long line.'

Emily Miller

Emily B. Miller, daughter of Ralph L. Miller, Gaseous Diffusion Development Division, recently was graduated from Lincoln Memorial University with a bachelor of science degree in elementary education. She is teaching at Orange Grove School for the mentally retarded in Chattanooga. While at Lincoln Memorial University, she was active in the Student National Education Association, Gamma Sigma Sigma (national service sorority whose project is mental retardation), and the Railsplitter (the school yearbook).

FIRE'S TOLL

Fires, most of which are avoidable, extract a tragic toll in this country: 33 lives a day; 1,692 homes and apartments destroyed; 26 school or college buildings; 10 churches; 22 hospitals or nursing homes; 136 farm buildings; 133 industrial plants; and 213 stores, offices and restaurants.



Miss United Fund

(Continued from Page 3)

United Fund didn't do its job and the agency would not have means to continue?

An expression of satisfaction lights the faces of women learning to paint or sew at the YWCA.

Accomplishment is in the hands of adults making Christmas bows or baskets at the Emory Valley Sheltered Workshop.

Relief and happiness are felt by a mother when the Rescue Squad finds her lost child.

These are just a few of the ways the United Fund helps make satisfaction, accomplishment, and relief available for everyone.

The faces of the United Fund tell what it's all about.

I found that the United Fund is more than a gold pin, an outstretched hand, or a slogan.

As a young person I'm among the thousands who feel protest against things that are not being done.

The United Fund is a protest with a meaning. It is a way to do constructive things about many of the problems of our community and our country. It is a united protest to get these things done.

Carpool members wanted from Rio Vista or Cherokee in Kingston to Administrative Area — 7:45 to 4:15. Contact W. J. Leggins, phose 3-3677.

10 Years' Service

D. A. WATERS

Is Typhoid Vaccine Still Needed?

By T. A. LINCOLN, M.D.

Although the first typhoid vaccine was tried in 1896, it wasn't until the 1960's that its effectiveness was carefully tested. Incredible? Yes, but the need was great when the vaccine was first developed and the first trial suggested that it was effective. Now, what is its status?

The answer to the above question would seem to be simple and direct, but the story of its evaluation is actually quite complicated. In recent field studies, the K vaccine was about 85 percent effective against probable low dose exposure. The L vaccine, the one more commonly used, was only about 65 percent effective.

Dr. Lincoln

The field trials were conducted in Yugoslavia, British Guiana, Poland and the U. S. S. R. under the general direction of the World Health Organization (WHO). The traditional double-blind technique was used. Neither the participants nor the medical authorities giving the injections knew whether they were vaccine or placebo.

Typhoid fever is still not rare in these countries. By conducting large studies, WHO was able to estimate its effectiveness, even though they had no information on the size of the exposure dose.

Volunteer Prisoners Used Again

An interesting finding occurred in Yugoslavia. There was an unusually high incidence of the disease in several areas due to heavily contaminated water. However, the incidence of typhoid was six times higher among people who had **not** volunteered for the vaccine evaluation program than among those in the vaccine program who had received only the placebo. It appeared, therefore, that people who volunteered for the vaccine study were more concerned with preventive measures, such as pure water and better sanitation, than those who had not volunteered.

Since field studies have many shortcomings, the U. S. Department of the Army and WHO gave money to the University of Maryland to conduct definitive studies on volunteer prisoners.

Prisoners Infected with Milk

The rigid requirements for human experimentation of the U. S. Public Health Service were carefully followed. No coercion was used and each man was allowed to withdraw at any time. The risks were carefully explained to them.

The prisoners were given precise numbers of typhoid bacilli suspended in one ounce of milk. The number of organisms necessary to infect most men was determined, the precise length of the incubation period, the effectiveness of currently available vaccines, and many details about resistance and infection were uncovered.

The University of Maryland group, headed by Dr. R. B. Hornick, found that it took a sizeable exposure to infect prisoners. Of 116 prisoners challenged with 100,000 viable typhoid bacilli, only 32, or 28 percent, got ill. Although there is no way to be certain in specific cases, it is believed that in most exposure of tourists to contaminated water, about 100,000 organisms are involved. When food becomes contaminated, exposures may be much higher. In these prisoners, ten million organisms were required to infect 50 percent, and one billion to infect 95 percent.

Exposures Bring Greater Resistance

The incubation period varied with the dose. At the 100,000 level, it averaged nine days, although it ranged from six to 33 days, while with the one billion dose, it was five days with a range of three to 32 days.

Over 200 men were given 100,000 organisms. Only about nine percent who had been vaccinated became ill, while 27 percent of those who had not received the vaccine got sick. The effectiveness was considered to be 67 percent. The vaccine gave no protection to those exposed to 10 million or more organisms.

People who live in countries where typhoid is still common have a much greater resistance, apparently the result of childhood exposures. It takes much more to infect them than it does "innocent and clean" Americans. Thus, tourists should be careful when they go to certain countries. Likewise, many foreigners will excrete typhoid bacilli during an epidemic season, even though they don't get ill. Thus people who have resistance can become infected without becoming ill and are therefore a public health hazard.

In 1910, typhoid killed about 20 per 100,000 population in USA cities. About 10 percent to 15 percent who became ill died. Primarily because of better sanitation, the death rate dropped to .5 per 100,000 in 1943. Now there are less than 400 cases each year with almost no deaths.

The risk of infection in this country is extremely low and the effectiveness of the vaccine is limited. Its use is now only recommended where there is intimate exposure to a typhoid carrier, definite community or institutional outbreaks and foreign travel in areas where typhoid is prevalent. The incidence of unpleasant reactions to the vaccine is sufficiently high to make routine immunization imprudent. The specific treatment of typhoid is chloramphenicol, which is highly successful if the correct diagnosis is promptly made.

SAMPLE BALLOT And Instructions To Voters

FIRST – Turn Large Red Lever to Right, Which Will Close Curtains.

SECOND – Turn (to left) the Small Black Levers Opposite Candidates' Names for Whom you Wish to Vote and Opposite your Choice of the Question, Either For or Against. Leave Them Turned. Don't Push Them Back.

Your Vote Will Not Be Recorded and the Curtains Will Not Open Unless You Leave the Small Black Levers Turned as Illustrated →

THIRD – Turn Large Red Lever to Left. This Will Record Your Vote and Open the Curtains.

	Col. 1 General Election DEMOCRATIC CANDIDATES ANDERSON COUNTY, TENNESSEE November 3, 1970	Col. 2 General Election REPUBLICAN CANDIDATES ANDERSON COUNTY, TENNESSEE November 3, 1970	Col. 3 General Election AMERICAN CANDIDATES ANDERSON COUNTY, TENNESSEE November 3, 1970	Col. 4 General Election INDEPENDENT CANDIDATES ANDERSON COUNTY, TENNESSEE November 3, 1970
For Governor Vote for One (1)	JOHN J. HOOKER, Jr. ☐	WINFIELD DUNN ☐	DOUGLAS L. HEINSOHN ☐	
For United States Senate Vote for One (1)	ALBERT GORE ☐	BILL BROCK ☐	CECIL E. PITARD ☐	DAN R. EAST ☐
For Public Service Commission WESTERN GRAND DIVISION Vote for One (1)	CAYCE PENTECOST ☐	HOWELL TAYLOR POWERS ☐		
For United States Congress FOURTH CONGRESSIONAL DISTRICT Vote for One (1)	JOE L. EVINS ☐	CHLORINE D. BOLES ☐		
For State Senate TENNESSEE GENERAL ASSEMBLY—FIFTH DISTRICT Vote for One (1)	RAY R. BAIRD ☐	DAN JOHNSON ☐		
For Direct Representative TENNESSEE GENERAL ASSEMBLY—ANDERSON COUNTY Vote for One (1)	LILY ROSE CLAIBORNE ☐	JAMES E. (BUZZ) ELKINS ☐	JAMES A. SLICE, Jr. ☐	
For Floterial Representative TENNESSEE GENERAL ASSEMBLY—EIGHTH FLOTERIAL DISTRICT Vote for One (1)	AL KEITH BISSELL, Jr. ☐	G. C. COOK, Jr. ☐		
"SHALL SECTION 1 OF ARTICLE VII OF THE CONSTITUTION OF THE STATE OF TENNESSEE BE AMENDED AS FOLLOWS: "By deleting therefrom the language, 'the sheriff for two years', and substituting in lieu thereof the language, 'the sheriff for four years', and that Section 1 of Article VII be further amended by deleting therefrom the language, 'six years in any term of eight years' and substituting in lieu thereof the language, 'two consecutive four-year terms.'"				
	FOR The Amendment ☐			
	AGAINST The Amendment ☐			

SAMPLE BALLOT—Typical of the ballots Nuclear Division men and women will see come November 3 is the one above from Anderson County. Ballots will vary in the State Senate races, as well as State Representative and Floterial Representative races. Note a Constitutional Amendment vote on the language of a sheriff's term in office.

'Stay-at-Home' Electorate

(Continued from Page 1)

of revamping all Congressional districts for the next decade on the basis of the 1970 census. The decisions made by upcoming State Representatives and Senators will have a great influence on who our U. S. Congressman may be for the next 10 or more years!

Tennessee has a governor to elect November 3, along with a U. S. Senator and nine Congressmen. Add to this list, the State Senators and Direct Representatives, as well as Floterial Representatives. There is also a Public Service Commissioner, and a Constitutional Amendment on the length of a sheriff's term in office.

(A sample ballot from Anderson County is shown on Page 5 of this issue of the Nuclear Division News. It is typical of ballots in the entire area. Exceptions would be, of course, in the U. S. Congress and State Representative races. The Oak Ridge area is now in the Fourth Congressional District. Knox County residents will vote on representation in the Third District.)

As many as 268 Congressional Districts could be changed by the State Legislators elected by you and your neighbors on Election Day! This is more than half of the districts in the whole country!

Tennessee stands to lose at least one Congressman when redistricting is accomplished. This means the remaining eight districts will have to be revamped. These districts will then stay the same for the next 10 years, until another census is taken.

History also shows that on the average, 92.5 percent of the House of Representatives is returned to the House by voters every election (average from 1954 to 1968.) Obviously this means that once in office it is difficult to dislodge a Congressman and yet he may get elected because the Congressional District lines may be redrawn to favor one political party.

1970 is the most important election year in a decade. Do get out and vote—all political ostriches liable to find that no one is listening.

22 Caliber Pistol Squad Tells Scores

All three Nuclear Division plants got recognition in the All-Carbide .22 Caliber Pistol Summer League. J. Brewer, K-25, led the field with a handicap score of 289.930. Y-12's J. King followed with 289.421; and L. Weston, ORNL, found the third place with 289.380.

Scratch leaders were K-25's T. Lemons; and ORNL's V. Raaen and W. Zobel.

Complete scores follow:

Firer	H'Cap Score	Scratch Score
J. Brewer	289.930	275
J. King	289.421	210
L. Weston	289.380	263
G. Jones	289.175	225
T. Lemons	288.729	279
H. Harrel	288.528	241
C. Harrison	287.848	215
R. Ward	286.979	244
R. Gwaltney	286.935	107
M. Harrison	286.934	192
J. DeLuca	286.626	262
J. Bell	286.009	217
G. McRae	285.924	204
G. Wilson	285.599	163
W. Baldwin	285.068	142
W. Zobel	284.839	270
V. Raaen	284.596	264
C. King	282.809	198
D. Hewette	282.720	252
J. Furman	279.569	228

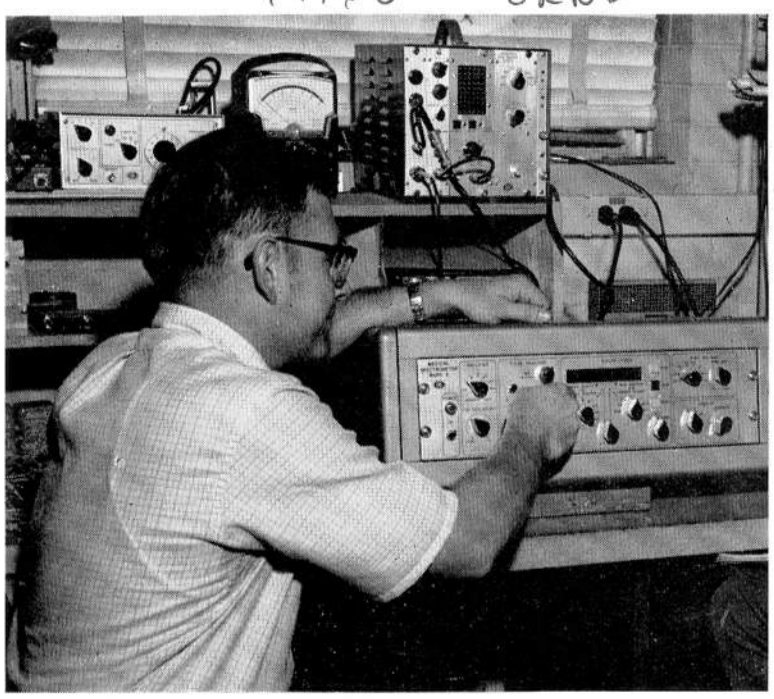
Recreation Calls Sportsmen Forward for Winter Leagues

The Recreation Departments of Y-12 and Oak Ridge Gaseous Diffusion Plant are organizing teamplay for basketball and volleyball. (They say that women may organize this season for play.)

Also paged are table tennis experts who wish to take part in winter tournaments.

All you need do is call Recreation (in Y-12, 3-7109; in ORGDP, 3-3097) and give them your name and what you want to play. They will do the rest.

77160 ORNL



NEW MEDICAL SPECTROMETER—G. Richard Dyer, Thermonuclear Division, Oak Ridge National Laboratory, conducts a test on a new medical spectrometer. Dyer was co-developer of the spectrometer. The machine makes it possible for physicians to conduct radioisotope tests in the hospital or clinic quickly. The new development cut the cost tremendously and also cut the space required by about nine-tenths of what was previously required for such equipment.

Small Medical Spectrometer Is Built to Fill Laboratory Needs

"If it doesn't exist, invent it."

"If you can't buy it commercially, build it yourself."

These truisms have been credos in North America since the first colonies were established on this continent. They're still valid.

A case in point is the development of a medical spectrometer at Oak Ridge National Laboratory. The spectrometer detects gamma rays (similar to the more familiar X ray) with a sodium iodide crystal.

Compact Model Needed

In the beginning ORNL planned to develop a compact, more economical linear amplifier to use with large sodium iodide detectors. The linear amplifier, somewhat like the more common hi-fi amplifier found in many homes, brings up the small electric signals to a point where the gamma rays can be measured.

The reason for their quest was that at the time there was nothing suitable on the market. The old ORNL equipment took up space requiring an entire wall of a laboratory. The new version is enclosed in a case approximately seven by nine by 16 inches.

The new spectrometer, which costs about $1,500, cut the size to about one-tenth of the old one and the price in half.

The device was also built with an eye toward giving medical people the benefits of recently developed technology such as new circuit design and new high voltage transistors like those used in television sets.

When ORNL staff members accomplished their original purpose —to build a small linear amplifier—it occurred to them that they might do the same with the preamplifier. Before they had finished, they had reduced the size and improved the performance of the pulse height analyzer, scaleratimer, high voltage supply mechanism, and the howler circuit (auditory indicator). All the circuits are arranged in functional units for ease of servicing.

Firms Interested

The lower cost makes it easier for most clinics and hospitals to purchase them. The spectrometer, used in conjunction with radioisotopes—and other devices — permits physicians to detect and diagnose thyroid conditions, kidney malfunctions, brain tumors, liver and bone ailments, and circulatory problems.

Several commercial firms have expressed an interest in the instrument and have been provided technical information on its design, development, and operation. Detailed plans and specifications for the device have also been made available to the public by AEC through the Clearinghouse for Federal Scientific and Technical Information in Springfield, Va.

TAT Trainees

(Continued from Page 1)

more than $6,000 a year. Based on this $5,000 annual increase in individual income, each trainee will repay the Government, through increased Federal tax payments alone, the entire cost of his training within a four-year period.

The average 1969 graduate received three job offers and each of the 338 persons who graduated had at least one firm job offer. In addition to Union Carbide, more than 30 major national corporations have employed graduates.

Besides ORAU and Union Carbide, agencies and institutions participating in TAT include the University of Tennessee, organized labor, the Tennessee Department of Employment Security, and the Division of Vocational-Technical Education of the Tennessee Department of Education.

K-25 Paper

O. H. Howard, Isotopic Analysis Department of the Laboratory Division, presented a paper at the Fourteenth Conference on Analytical Chemistry in Nuclear Technology at Gatlinburg. The title of Howard's paper was, "Determination of Metallic-Element Impurities in Uranium Hexafluoride by Spark Source Mass Spectrography." The paper will be submitted to a technical journal for publication at a later date.

Auto Strike Hits Carbide Earnings For Third Quarter

Union Carbide Corporation expects its third-quarter earnings to be lower than the 72 cents a share reported in the third quarter of 1969, according to a statement from Birny Mason, Jr., chairman of the board. Mason said that although final figures will not be available for about two weeks. the estimated earnings for the quarter would be in the range of 55 to 60 cents a share, a decline of approximately 20 percent.

Mason also noted that the earnings decline reflected a weakening trend in the corporation's domestic business, which began to develop in the second quarter and continued in the third quarter. "Although first-half domestic sales were three percent ahead of 1969," Mason stated, "those for the third quarter were four percent lower than a year ago. While many of our product groups have been affected, the primary softening has been in the chemicals and plastics sector, which has been particularly influenced by slowdowns in the automotive, housing, furniture, and textile industries. The General Motors strike already has had an effect on sales, and this naturally will become more severe if the strike continues."

The board chairman indicated that Union Carbide was continually reviewing all costs and selling prices and adhering to its program of increasing concentration in its more successful business areas. This program involves the sale of operations that do not fit the corporation's long-range plans as well as the shutting down of facilities that are no longer profitable.

UNITED WAY SIGNS—At press time, the first employee-giving totals had not been tabulated, but we wanted to show you this year's sign anyway. "Decorating" the scene are, from left, Lena Thomas and Mary Linda Moore, both of whom work at the Computing Technology Center. The sign shown is just outside ORGDP, and similar ones are being used at both Y-12 and ORNL.

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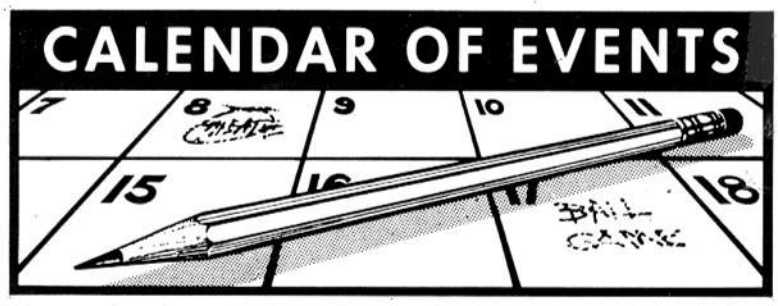

TECHNICAL

October 22

Biomedical Graduate School Lecture Series: "District RNA Synthesis Systems in Mammalian Cells," Sheldon Penman, Massachusetts Institute of Technology. Large Conference Room, Building 9207, 3 p.m.

October 23

The University of Tennessee-Oak Ridge Graduate School of Biomedical Science Lecture Series on the Biology of Aging: "Neurogenesis and the Development of Behavior," Victor Hamburger, Washington University, St. Louis. Large Conference Room, Building 9207, 3 p.m.

Biology Division Seminar: "Problems in the Reactivity of Reduced Flavin and Flavoprotein and Oxygen," Vincent Massey, University of Michigan. Large Conference Room, Building 9207, 12:15 p.m.

October 26

ORNL-NSF Environmental Program Seminar: "Ultratrace Gases in Breath, Smog, and Flatus," Norman Milleron, Lawrence Radiation Laboratory. East Auditorium, Building 4500N, 3 p.m.

Health Physics Division Seminar: "Optical and Photoemission Studies of Surface Collective Modes in Metals," John G. Endriz, Stanford Electronics Laboratories. East Auditorium, Building 4500N, 10 a.m.

Biology Division Seminar: "Initiation Sites of DNA Synthesis in Mammalian Cells and the Effect of DNA Inhibitors," Charles Ockey, Christie Hospital and Holt Radium Institute, Manchester. First Floor Tower Annex Conference Room, Building 9207, 3:30 p.m.

October 28

ASM Symposium on Modern Microanalytical Techniques in Metallurgy: "Microprobes: Electron, Ion, Atom and Nuclear Reaction," R. Lewis, Consolidated Electrodynamics Corporation, S. S. Brenner, E. C. Bain Laboratory for Fundamental Research, and E. Ricci. National Guard Armory, Oak Ridge, 8 p.m. (Refreshments will be served).

Metals and Ceramics Division Seminar: "An Introduction to Graphite: Kinds, Uses and Studies," W. H. Cook. East Auditorium, Building 4500N, 2:45 p.m.

October 29

Metals and Ceramics Division Seminar: "Field Ion Microscope-Atom Probe Studies of Clustering and Precipitation," S. Sidney Brenner, The Edgar C. Bain Laboratory, U.S. Steel. East Auditorium, Building 4500N, 1:30 p.m.

Biology Division Seminar: (Title to be announced.) Jerome A. Schiff, Brandeis University. Large Conference Room, Building 9207, 3 p.m.

October 30

Biology Division Seminar: (Title to be announced.) William R. Lee, Louisiana State University. First Floor Tower Annex Conference Room, Building 9207, 12:15 p.m.

COMMUNITY

October 24

Oak Ridge Music Association presents pianist William Dorm. 8 p.m. Oak Ridge High School. Adults $4, Students $2.

October 31

Oak Ridge Music Association presents New Cleveland Quartet, 8:15 p.m. Oak Ridge Playhouse, Adults $4, Students $2.